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23. *Cosmoladium tumidum* n. sp. × 750.
24. *Cosmariium pseudoprotuberans* Kirch. × 750.
25. *C. Pacificum* n. sp. × 750.
26. *C. Gotlandicum* Wittr. × 750.
27. *C. elegantissimum* Lund. × 750.
28. *C. pericymatium* Nordst. × 750.
29. *C. synostegos* Schaarschm. × 750.
30. *C. porrectum* Nordst. × 560.
31. *C. costatum* Nordst. × 750.
32. *C. margaritatum* (Lund.) Roy and Bissett. × 560.
33. *C. subspeciosum* var. *validius* Nordst. × 750.
34. *Staurostrum leve* Ralfs. × 750.
35. *S. protractum* nov. nom. × 560.

## The Genus *Cenchrus* in North America.

BY GEO. V. NASH.

*Cenchrus* is a small genus of grasses containing about a dozen species, found principally in tropical and sub-tropical regions. In the United States it extends into the temperate zone. One species, *C. tribuloides*, the common bur-grass, occurs frequently in sandy soil along river banks, and has a very wide distribution, extending from Massachusetts to Ontario, Minnesota and Nebraska, south to Mexico. It is also found in South America and in Cuba. The other species occurring in the United States are confined to the southern parts of the country, one, *C. echinatus*, extending as far north as North Carolina.

The genus in the United States is readily divided into two well-marked groups, the first containing those forms in which the involucre consists of two spine-bearing valves, more or less concealing and enclosing the 2-6 spikelets, as illustrated in the common *C. tribuloides*; the second has only one species, the involucre consisting of 2-4 rows of erect bristles, the outer shorter than the inner, the single spikelet merely surrounded by the bristles and not enclosed. The single species belonging to this group is *C. myosuroides*, which ranges from Georgia and Florida to Texas, and south through Mexico to South America, where it is very common.

**Key to the Species.**

Involucre consisting of two spine-bearing valves, enclosing the 2-6 spikelets.

Involucre armed at base.

With shorter, generally reflexed spines; pedicels smooth; involucre 2-flowered.

Involucre globose, pubescent.

1. *C. tribuloides*.

Involucre ovate, smooth,

2. *C. gracillimus*.

With erect barbed bristles; pedicels villous; involucre 4-6 flowered.

3. *C. echinatus*.

Involucre naked at base.

4. *C. incertus*.

Involucre consisting of 2-4 rows of erect slender spines and bristles, at the base of the single spikelet.

5. *C. myosuroides*.

**I. CENCHRUS TRIBULOIDES L. Sp. Pl. 1050. 1753.**

*C. Carolinianus* Walt. Fl. Car. 79. 1788. Teste Pursh.

Stems erect or ascending, generally decumbent at base, robust, 2-6 dm. long, branching freely, sheaths generally strongly inflated, smooth, striate, compressed, the lower ones overlapping, the upper shorter than internodes, 3-8 cm. long; leaves 6-12 cm. long, 4-8 mm. wide, smooth or scabrous, flat or slightly complanate; spikes 3-6 cm. long, generally partially included in upper sheaths, densely 6-20-flowered; internodes of scabrous rachis 3-5 mm. long; involucre 2-flowered, globose, pubescent to villous, yellowish to light green in color, smooth at base, spines 3-4 mm. long, slightly to strongly ciliate at base, acutely barbulate at apex; spikelets 6-7 mm. long, generally not exerted beyond the involucre; 1st glume hyaline, triangular, acute, about one-half as long as spikelet, sparingly scabrous, strongly 1-nerved; 2d glume of firm texture, ovate, obtuse, about three-fourths as long as spikelet, scabrous, faintly 5-nerved at base, strongly so at apex; 3d glume firm, ovate, somewhat acute, about equaling spikelet, scabrous, 5-nerved; 4th glume chartaceous, broadly ovate, acuminate, 5-7 mm. long, scabrous at apex, 5-nerved; palet of first flower about as long as glume, 2-nerved, strongly scabrous between the nerves especially toward the apex, empty or enclosing 3 stamens; palet of perfect flower chartaceous, broadly ovate, slightly shorter than glume, faintly 2-nerved, scabrous toward the apex; seed oblong-obovate, 3 mm. long, 2-2.5 mm. broad, compressed.

Extensively distributed in the United States ranging from Massachusetts to Ontario, Minnesota and Nebraska, south to Florida and Mexico. Extremely variable, but its robust habit, generally strongly inflated sheaths and light colored globose involucre will distinguish it from its nearest relatives.

2. *CENCHRUS GRACILLIMUS* n. sp.

Stems ascending or erect, 3–6 dm. high, simple or occasionally sparingly branched above, slender; sheaths smooth, striate, the lower overlapping, the upper shorter than internodes, 6–7 cm. long, but slightly inflated; leaves complanate, 5–8 cm. long, about 2 mm. broad, acuminate, scabrous on margins and mid-nerve; spike finally long-exserted, 3–5 cm. long, loosely 3–6 flowered, internodes of scabrous rachis about 1 cm. long; involucre 2-flowered, smooth, ovate, purplish, deeply furrowed and smooth at base; spines purple, 5–6 mm. long, 1 mm. broad at base where they are sometimes ciliate, acutely barbate at the apex; spikelets about 8 mm. long, exserted beyond involucre for one-third to one-half their length; 1st glume triangular, hyaline, acute, one-half as long as spikelet, strongly 1-nerved, slightly scabrous; 2d glume firm, ovate, acute, 7-nerved, scabrous; 3d glume of firm texture, ovate-lanceolate, acuminate, slightly shorter than spikelet, 5-nerved, scabrous especially toward apex; 4th glume chartaceous, 7–8 mm. long, ovate-lanceolate, long-acuminate, strongly 5-nerved at apex, scabrous for upper half; palea of first flower equaling glume, strongly scabrous, 2-nerved, empty or enclosing three stamens; palea of perfect flower ovate, long-acuminate, chartaceous, a little shorter than glume, 2-nerved, strongly scabrous toward apex; seed oblong, 2.5 mm. long, 1.5 mm. broad.

Florida, occurring in the high pine land, together with *C. tribuloides* and *C. echinatus*, flowering a little earlier than the former and later than the latter. It is readily distinguishable from either, especially when growing in the field, by its long slender purple spines, smooth involucre, very slender habit and closely complanate leaves. Begins to flower early in April. My Nos. 188 and 288, collection of 1894.

3. *CENCHRUS ECHINATUS* L. Sp. Pl. 1050. 1753.

Stems creeping, erect, 3–6 dm. long, branching; sheaths smooth, striate, inflated, lower ones overlapping, upper shorter than internodes, 8–12 cm. long; leaves 1–4 dm. long, 5–15 mm. wide, smooth or scabrous, flat; spikes 4–12 cm. long, finally more or less exserted, very densely 20–50 flowered, internodes of the scabrous rachis 2–3 mm. long; involucre 4–6 flowered, globose, green to purplish, more or less pubescent, villous at base; spines 3–4 mm. long, barbate at apex, more or less ciliate at base; bristles at base of involucre numerous, slender, distinctly barbed for their whole length; spikelets 6–7 mm. long, more or less exserted from involucre; 1st glume hyaline, lanceolate, obtuse or acute, one-half as long as spikelet, strongly 1-nerved, sparingly scabrous at apex;

2d glume firm, ovate, obtuse, three-fourths as long as spikelet, 5-nerved, scabrous; 3d glume firm, ovate-lanceolate, acuminate, slightly exceeded by fourth glume, 5-nerved, scabrous; 4th glume chartaceous, ovate-lanceolate, acuminate, 6-7 mm. long, 5-nerved, scabrous at apex; palet of first flower about as long as glume, 2-nerved, strongly scabrous; palet of perfect flower as long as glume, chartaceous, ovate-lanceolate, faintly 2-nerved; seed obovate to elliptical, 2.5 mm. long, 1.5 mm. wide, compressed.

This plant is well marked by its broad flat leaves, and the slender barbed bristles surrounding the base of the involucre, which contains double the number of spikelets found in the other species.

North Carolina to Texas, along the coast.

4. *CENCHRUS INCERTUS* M. A. Curtis, Bost. Journ. Nat. Hist. 1: 135. 1837.

Stems erect or decumbent at base when young, finally creeping, 3-6 dm. long, smooth; sheaths smooth, inflated, compressed, striate, lower ones more or less overlapping, upper shorter than internodes, 5-9 cm. long; leaves smooth, flat, 4-15 cm. long, 3-5 mm. wide; spike generally exserted, 3-6 cm. long, 8-20-flowered, internodes of the scabrous rachis 2-5 mm. long; involucre 2-flowered, pubescent, ovoid, smooth at base; spines about 3 mm. long, very broad at base, ciliate; spikelets 5 mm. long, more or less exserted from involucre; 1st glume hyaline, triangular, acute, strongly 1-nerved, one-half as long as spikelet; 2d glume of firm texture, ovate, obtuse, about three-fourths as long as spikelet, 5-7-nerved, scabrous; 3d glume ovate, acute, 5-nerved, somewhat shorter than fourth glume, scabrous; 4th glume chartaceous, broadly ovate, acute, about 5 mm. long, strongly 5-nerved and scabrous at apex; palet of first flower about equaling glume, strongly scabrous, 2-nerved, empty or enclosing three stamens; palet of perfect flower chartaceous, ovate, acute, about equaling glume, scabrous at apex; seed oval, 2 mm. long, 1.5 mm. broad.

Ranges from South Carolina to Florida and Texas. The smaller involucre, naked at base, with fewer and shorter spines, readily distinguish this plant from *C. tribuloides* which it somewhat resembles.

5. *CENCHRUS MYOSUROIDES* H. B. K. Nov. Gen. 1: 115. 1815.

*Panicum cenchroides* Ell. Bot. S. C. and Ga. 1: 111. 1817.

Perennial from a running rootstock. Stems 6-14 dm. high, simple, or branched above, terete, smooth; sheaths somewhat inflated, 7-14 cm. long, striate; leaves smooth, 1-3 dm. long, 3-8

mm. wide; spikes included in upper sheath, or more or less exerted, densely many-flowered, 5–20 cm. long, internodes of the scabrous rachis 2–5 mm. long; involucre consisting of 1–2 rows of barbed spines as long as the spikelet, subtended by 1–2 rows of barbed bristles one-fourth to one-half as long; spikelet about 5 mm. long, resting on the involucre and equaling its spines; glumes all more less short-pointed by the excurrent midnerve; 1st glume hyaline, triangular, acute, about one-half as long as spikelet, 1-nerved; 2d glume firm, ovate, acute, about three-fourths as long as spikelet, 5-nerved, sparingly scabrous; 3d glume as long as the fourth, firm, ovate, acute, strongly 5-nerved at apex; 4th glume chartaceous, ovate, acute, 5 mm. long, 5-nerved at apex; palea of first flower from one-quarter to one-half as long as glume; palea of perfect flower equaling glume, strongly 2-nerved and scabrous at apex.

Ranges from Georgia (Elliott) to South Florida, western Texas and Mexico.

### *Juncus scirpoides* and its immediate Relatives.

BY FREDERICK VERNON COVILLE.

In the year 1868 Dr. Engelmann grouped under *Juncus scirpoides* several closely related plants which, from the data now at hand, seem to require separation into four species. In 1880 Dr. Franz Buchenau described one of these as *J. Engelmanni*, and in 1890 another as *J. crassifolius*. I am now convinced that still another should be separated specifically under the name of *J. megacephalus*, published sixty years ago by M. A. Curtis, of Wilmington, North Carolina.

After examining the earlier literature of these plants it has been found necessary to change the current names of three species, in two cases substituting older names, and in one case supplying a new name. The first requirement for a proper disposition of the many published names was the positive identification of Michaux's *J. polycephalus*, published in 1803, which, at different times, has been attached by various authors to nearly a dozen different plants, and has therefore fallen into disrepute and consequent disuse. With our present knowledge of the group, however, the name is capable of positive identification. The current dis-